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10/800,642	03/16/2004	Hideo Namiki	Q78526	1158

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EXAMINER

HOLLIDAY, JAIME MICHELE

ART UNIT PAPER NUMBER

2686

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/800,642	NAMIKI ET AL.	
	Examiner	Art Unit	
	Jaime M. Holliday	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/16/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☒ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/16/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on March 16, 2004 has been considered by the Examiner and made of record in the application file.

Claim Objections

2. **Claim 38** is objected to because of the following informalities:
 - a) On **line 2**, replace "means" with --circuit-- after "connection" in order to clarify scope of limitation.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1, 6-7, 12, 16, 21-22, 27, 31, 36-37 and 42** are rejected under 35 U.S.C. 102(e) as being anticipated by **Aoki (U.S. Patent # 6,600,922 B1)**.

Art Unit: 2686

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Consider **claim 1**, Akoi clearly shows and discloses a mobile station capable of quickly returning to its home system when roaming, reading on the claimed "method for a mobile phone," (abstract) comprising:

(1) whenever a mobile station **30** is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "first criterion." By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "determining if said mobile phone is located outside a service range of a preferred communication system based on a first criterion while connecting to said preferred communication system," (col. 6 lines 4-16);

(2) detecting, when the home system is not available, signal level of an available control signal, reading on the claimed "connecting to a non-preferred communication system based on the determination in (1)," (col. 3 lines 7-8);

(3) determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined value or level; if so the control system sets a home band scan flag (F-HBS), reading on the claimed "determining if said mobile phone is located within a service range of said preferred communication system based on a second criterion that is different from said first criterion while connecting to said non-preferred communication system," (col. 6 lines 23-34); and

(4) carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a predetermined value, it will stop roaming, reading on the claimed "connecting to said preferred communication system based on the determination in (3)," (col. 6 lines 35-40).

Consider **claim 6**, and **as applied to claim 1 above**, Aoki clearly shows and discloses that when a scan time has expired while the mobile station is roaming a control system **62** determines whether or not the change in the signal-level is greater than a predetermined value, and if it is, the control system scans the home band, reading on the claimed "determination in (3) is made when connection to said non-preferred communication system continues for a predetermined time period," (col. 6 lines 60-67).

Consider **claim 7**, Akoi clearly shows and discloses a mobile station capable of quickly returning to its home system when roaming, reading on the claimed "method for a mobile phone," (abstract) comprising:

(1) whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located. By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "determining if said mobile phone is located outside a service range of a preferred communication system while connecting to said preferred communication system," (col. 6 lines 4-16);

(2) detecting, when the home system is not available, signal level of an available control signal, reading on the claimed "connecting to a non-preferred communication system based on the determination in (1)," (col. 3 lines 7-8);

(3) analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located and comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "determining if said mobile phone is located

within a service range of said non-preferred communication system while connecting to said non-preferred communication system," (col. 6 lines 4-16);

(4) determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined value or level, reading on the claimed "first criterion;" if so the control system sets a home band scan flag (F-HBS), reading on the claimed "when it is determined in (3) that said mobile phone is located within a service range of said non-preferred communication system, determining if said mobile phone is located within a service range of said preferred communication system based on a first criterion," (col. 6 lines 23-34);

(5) carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a predetermined value, it will stop roaming, reading on the claimed "connecting to said preferred communication system based on the determination in (4)," (col. 6 lines 35-40).

(6) whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "when it is determined in (3) that said mobile phone is located outside a service range of said non-preferred communication

system, determining if said mobile phone is located within a service range of said preferred communication system based on a second criterion that is different from said first criterion,” (col. 6 lines 4-16); and

(7) comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed “connecting to said preferred communication system based on the determination in (6),” (col. 6 lines 11-13).

Consider **claim 12**, and **as applied to claim 7 above**, Aoki clearly shows and discloses that when a scan time has expired while the mobile station is roaming a control system determines whether or not the change in the signal-level is greater than a predetermined value, and if it is, the control system scans the home band, reading on the claimed “determination in (4) and (6) are made when connection to said non-preferred communication system continues for a predetermined time period,” (col. 6 lines 60-67).

Consider **claim 16**, Akoi clearly shows and discloses a mobile station comprising an antenna connected to a transceiver **64** connected to a control system **62**, a received signal-level detector **58** included in the receiver portion of the transceiver, and a timer included in the control system, capable of quickly returning to its home system when roaming, reading on the claimed “mobile phone,” (abstract, col. 5 lines 33-45) comprising:

whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether

or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "first criterion." By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "first determination means for determining if said mobile phone is located outside a service range of a preferred communication system while connecting to said preferred communication system," (col. 6 lines 4-16);

detecting, when the home system is not available, signal level of an available control signal, reading on the claimed "first connection means for connecting to a non-preferred communication system based on the determination of said first determination means," (col. 3 lines 7-8);

determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined value or level; if so the control system sets a home band scan flag (F-HBS), reading on the claimed "second determination means for determining if said mobile phone is located within a service range of said preferred communication system while connecting to said non-preferred communication system," (col. 6 lines 23-34); and

carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a

predetermined value, it will stop roaming, reading on the claimed "second connecting means for connecting to said preferred communication system based on the determination of said second determination means, wherein said first and second determination means use different criterion to determine if said mobile phone is located within a service range of said preferred communication system," (col. 6 lines 35-40).

Consider **claim 21**, and **as applied to claim 16 above**, Aoki clearly shows and discloses that when a scan time has expired while the mobile station is roaming a control system determines whether or not the change in the signal-level is greater than a predetermined value, and if it is, the control system scans the home band, reading on the claimed "second determination means determines if said mobile phone is located within a service range of said preferred communication system when said mobile phone is connected to said non-preferred communication system, if said connection continues for a predetermined time period," (col. 6 lines 60-67).

Consider **claim 22**, Akoi clearly shows and discloses a mobile station comprising an antenna connected to a transceiver connected to a control system, a received signal-level detector included in the receiver portion of the transceiver, and a timer included in the control system, capable of quickly returning to its home system when roaming, reading on the claimed "mobile phone," (abstract, col. 5 lines 33-45) comprising:

whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located. By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "first determination means for determining if said mobile phone is located outside a service range of a preferred communication system while connecting to said preferred communication system," (col. 6 lines 4-16);

detecting, when the home system is not available, signal level of an available control signal, reading on the claimed "first connection means for connecting to a non-preferred communication system based on the determination of said first determination means," (col. 3 lines 7-8);

analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located and comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "second determination means for determining if said mobile phone is located within a service range of said non-preferred communication system while connecting to said non-preferred communication system," (col. 6 lines 4-16);

determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined value or level, reading on the claimed "first criterion;" if so the control system sets a home band scan flag (F-HBS), reading on the claimed "third determination means for determining if said mobile phone is located within a service range of said preferred communication system based on a first criterion, if it is determined by said second determination means that said mobile phone is located within a service range of said non-preferred communication system," (col. 6 lines 23-34);

carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a predetermined value, it will stop roaming, reading on the claimed "second connection means for connecting to said preferred communication system based on the determination of said third determination means," (col. 6 lines 35-40).

whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "fourth determination means for determining if said mobile phone is located within a service range of said preferred communication system based on a second criterion that is different from said first criterion, when it is determined by said second determination means that said

mobile phone is located outside a service range of said non-preferred communication system," (col. 6 lines 4-16); and

comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "third connection means for connecting to said preferred communication system based on the determination by said fourth determination means," (col. 6 lines 11-13).

Consider **claim 27**, and **as applied to claim 22 above**, Aoki clearly shows and discloses that when a scan time has expired while the mobile station is roaming a control system determines whether or not the change in the signal-level is greater than a predetermined value, and if it is, the control system scans the home band, reading on the claimed "third and fourth determination means determine if said mobile phone is located within a service range of said preferred communication system when said mobile phone is connected to said non-preferred communication system, if said connection continues for a predetermined time period," (col. 6 lines 60-67).

Consider **claim 31**, Aoki clearly shows and discloses a mobile station comprising an antenna connected to a transceiver connected to a control system, a received signal-level detector included in the receiver portion of the transceiver, and a timer included in the control system, capable of quickly returning to its home system when roaming, reading on the claimed "mobile phone," (abstract, col. 5 lines 33-45) comprising:

whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "first criterion." By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "first determination circuit for determining if said mobile phone is located outside a service range of a preferred communication system while connecting to said preferred communication system," (col. 6 lines 4-16);

detecting, when the home system is not available, signal level of an available control signal, reading on the claimed "first switch for connecting to a non-preferred communication system based on the determination of said first determination circuit," (col. 3 lines 7-8);

determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined value or level; if so the control system sets a home band scan flag (F-HBS), reading on the claimed "second determination circuit for determining if said mobile phone is located within a service range of said preferred communication system while connecting to said non-preferred communication system," (col. 6 lines 23-34); and

carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a predetermined value, it will stop roaming, reading on the claimed "second switch for connecting to said preferred communication system based on the determination of said second determination circuits; wherein said first and second determination circuits use different criterion to determine if said mobile phone is located within a service range of said preferred communication system," (col. 6 lines 35-40).

Consider **claim 36**, and **as applied to claim 31 above**, Aoki clearly shows and discloses that when a scan time has expired while the mobile station is roaming a control system determines whether or not the change in the signal-level is greater than a predetermined value, and if it is, the control system scans the home band, reading on the claimed "second determination circuit determines if said mobile phone is located within a service range of said preferred communication system when said mobile phone is connected to said non-preferred communication system, if said connection continues for a predetermined time period," (col. 6 lines 60-67).

Consider **claim 37**, Aoki clearly shows and discloses a mobile station comprising an antenna connected to a transceiver connected to a control system, a received signal-level detector included in the receiver portion of the transceiver, and a timer included in the control system, capable of quickly returning to its

home system when roaming, reading on the claimed "mobile phone," (abstract, col. 5 lines 33-45) comprising:

whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located. By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "first determination circuit for determining if said mobile phone is located outside a service range of a preferred communication system while connecting to said preferred communication system," (col. 6 lines 4-16);

detecting, when the home system is not available, signal level of an available control signal, reading on the claimed "first switch for connecting to a non-preferred communication system based on the determination of said first determination circuit," (col. 3 lines 7-8);

analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located and comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "second determination circuit for determining if said mobile phone is located within a service range of said non-preferred

communication system while connecting to said non-preferred communication system (col. 6 lines 4-16);

determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined value or level, reading on the claimed "first criterion;" if so the control system sets a home band scan flag (F-HBS), reading on the claimed "third determination means for determining if said mobile phone is located within a service range of said preferred communication system based on a first criterion, if it is determined by said second determination means that said mobile phone is located within a service range of said non-preferred communication system," (col. 6 lines 23-34);

carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a predetermined value, it will stop roaming, reading on the claimed "second switch for connecting to said preferred communication system based on the determination of said third determination circuit," (col. 6 lines 35-40).

whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "fourth determination circuit for determining if said mobile phone is located within a service range of said preferred

communication system based on a second criterion that is different from said first criterion, when it is determined by said second determination circuit that said mobile phone is located outside a service range of said non-preferred communication system,” (col. 6 lines 4-16); and

comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed “third switch for connecting to said preferred communication system based on the determination by said fourth determination circuit,” (col. 6 lines 11-13).

Consider **claim 42**, and **as applied to claim 37 above**, Aoki clearly shows and discloses that when a scan time has expired while the mobile station is roaming a control system determines whether or not the change in the signal-level is greater than a predetermined value, and if it is, the control system scans the home band, reading on the claimed “third and fourth determination circuits determine if said mobile phone is located within a service range of said preferred communication system when said mobile phone is connecting to said non-preferred communication system continues for a predetermined time period,” (col. 6 lines 60-67).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 2, 5, 8, 11, 13, 17, 20, 23, 26, 28, 32, 35, 38, 41 and 43** are rejected under 35 U.S.C. 103(a) as being obvious over **Aoki (U.S. Patent # 6,600,922 B1)** in view of **Cuffaro et al. (U.S. Patent # 5,999,814)**.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Consider **claim 2**, and **as applied to claim 1 above**, Aoki clearly shows and discloses the claimed invention except that the predetermined values are set so that roaming outside of a home system occurs less frequently than returning from the visited network.

In the same field of endeavor, Cuffaro et al. clearly show and disclose a method for handling oscillating mobile station handoffs between cells in a cellular communications network. A mobile switching center (MSC) in the network maintains a queue that stores the number of cells the mobile station has been. It

considers the handoff sequence contiguous if the time period between successive handoffs is less than Threshold 1 (15 seconds). A contiguous sequence is considered oscillating if the time between the current handoff and the oldest handoff on the contiguous sequence is less than Threshold 2 (45 seconds), reading on the claimed "first and second criteria are set so that said connection in (4) does not frequently occur as compared with said connection in (2)," (abstract, col. 4 lines 3-13).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set the threshold values such that connections or roaming is inhibited when necessary as taught by Cuffaro et al. in the mobile station of Aoki, in order to return to the home system quickly.

Consider **claim 5**, Akoi, as modified by Cuffaro et al., discloses the claimed invention **as applied to claim 2 above**, and in addition, Cuffaro et al. further disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for a predetermined period of time, for example, one minute. When the time period expires handoffs are once again allowed, reading on the claimed "connection in (2) is made if said mobile phone is located outside a service range of said preferred communication system continuously for a predetermined time period," (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by

Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

Consider **claim 8**, and **as applied to claim 7 above**, Aoki clearly shows and discloses the claimed invention except that the predetermined values are set so that roaming outside of a home system occurs less frequently then returning from the visited network.

In the same field of endeavor, Cuffaro et al. clearly show and disclose a method for handling oscillating mobile station handoffs between cells in a cellular communications network. A mobile switching center (MSC) in the network maintains a queue that stores the number of cells the mobile station has been. It considers the handoff sequence contiguous if the time period between successive handoffs is less than Threshold 1 (15 seconds). A contiguous sequence is considered oscillating if the time between the current handoff and the oldest handoff on the contiguous sequence is less than Threshold 2 (45 seconds), reading on the claimed "first and second criteria are set so that said connection in (5) does not frequently occur as compared with said connection in (7)," (abstract, col. 4 lines 3-13).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set the threshold values such that connections or roaming is inhibited when necessary as taught by Cuffaro et al. in the mobile station of Aoki, in order to return to the home system quickly.

Consider **claim 11**, and **as applied to claim 7 above**, Aoki clearly shows and discloses the claimed invention except that the mobile station is roaming for a predetermined time.

In the same field of endeavor, Cuffaro et al. clearly show and disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for a predetermined period of time, for example, one minute. When the time period expires handoffs are once again allowed, reading on the claimed "connection in (2) is made if said mobile phone is located outside a service range of said preferred communication system continuously for a predetermined time period," (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

Consider **claim 13**, Aoki clearly shows and discloses a mobile station capable of quickly returning to its home system when roaming, reading on the claimed "method for a mobile phone," (abstract) comprising:

(1) whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification

number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "first criterion." By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "determining based on a first criterion if said mobile phone is located outside a service range of a preferred communication system while connecting to said preferred communication system," (col. 6 lines 4-16);

(2) determining if a scan time has expired while the mobile station is roaming, reading on the claimed "determining if a predetermined time period passes," (col. 6 lines 60-61);

(5) determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined value or level; if so the control system sets a home band scan flag (F-HBS), reading on the claimed "determining if said mobile phone is located within a service range of said preferred communication system while connecting to said non-preferred communication system," (col. 6 lines 23-34); and

(6) carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a predetermined value, it will stop roaming, reading on the claimed "connecting to said preferred communication system based on the determination in (5)," (col. 6 lines 35-40).

However, Aoki does not specifically disclose that mobile station is roaming for a predetermined time.

In the same field of endeavor, Cuffaro et al. clearly show and disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for a predetermined period of time, for example, one minute, reading on the claimed “(3) determining based on a second criterion that is different from said first criterion if said mobile phone is located outside a service range of a preferred communication system within said predetermined time period.” When the time period expires handoffs are once again allowed, reading on the claimed “(4) connecting to a non-preferred communication system when said mobile phone is located outside a service range of said preferred communication system continuously for a predetermined time period,” (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

Consider **claim 17**, and **as applied to claim 16 above**, Aoki clearly shows and discloses the claimed invention except that the predetermined values are set so that roaming outside of a home system occurs less frequently than returning from the visited network.

In the same field of endeavor, Cuffaro et al. clearly show and disclose a method for handling oscillating mobile station handoffs between cells in a cellular communications network. A mobile switching center (MSC) in the network maintains a queue that stores the number of cells the mobile station has been. It considers the handoff sequence contiguous if the time period between successive handoffs is less than Threshold 1 (15 seconds). A contiguous sequence is considered oscillating if the time between the current handoff and the oldest handoff on the contiguous sequence is less than Threshold 2 (45 seconds), reading on the claimed "different criteria are set so that said connection relating to said second connection means does not frequently occur as compared with said connection relating to said first connection means," (abstract, col. 4 lines 3-13).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set the threshold values such that connections or roaming is inhibited when necessary as taught by Cuffaro et al. in the mobile station of Aoki, in order to return to the home system quickly.

Consider **claim 20**, and **as applied to claim 16 above**, Aoki clearly shows and discloses the claimed invention except that the mobile station is roaming for a predetermined time.

In the same field of endeavor, Cuffaro et al. clearly show and disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for

a predetermined period of time, for example, one minute. When the time period expires handoffs are once again allowed, reading on the claimed "first connection means connects to said non-preferred communication system if said mobile phone is located outside a service range of said preferred communication system continuously for a predetermined time period," (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

Consider **claim 23**, and **as applied to claim 22 above**, Aoki clearly shows and discloses the claimed invention except that the predetermined values are set so that roaming outside of a home system occurs less frequently than returning from the visited network.

In the same field of endeavor, Cuffaro et al. clearly show and disclose a method for handling oscillating mobile station handoffs between cells in a cellular communications network. A mobile switching center (MSC) in the network maintains a queue that stores the number of cells the mobile station has been. It considers the handoff sequence contiguous if the time period between successive handoffs is less than Threshold 1 (15 seconds). A contiguous sequence is considered oscillating if the time between the current handoff and the oldest handoff on the contiguous sequence is less than Threshold 2 (45 seconds), reading on the claimed "first and second criteria are set so that said

connection relating to said second connection means does not frequently occur compared with said connection relating to said third connection means," (abstract, col. 4 lines 3-13).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set the threshold values such that connections or roaming is inhibited when necessary as taught by Cuffaro et al. in the mobile station of Aoki, in order to return to the home system quickly.

Consider **claim 26**, and **as applied to claim 22 above**, Aoki clearly shows and discloses the claimed invention except that the mobile station is roaming for a predetermined time.

In the same field of endeavor, Cuffaro et al. clearly show and disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for a predetermined period of time, for example, one minute. When the time period expires handoffs are once again allowed, reading on the claimed "first connection means connects to a non-preferred communication system if said mobile phone is located outside a service range of a preferred communication system continuously for a predetermined time period," (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

Consider **claim 28**, Akoi clearly shows and discloses a mobile station comprising an antenna connected to a transceiver connected to a control system, a received signal-level detector included in the receiver portion of the transceiver, and a timer included in the control system, capable of quickly returning to its home system when roaming, reading on the claimed "mobile phone," (abstract, col. 5 lines 33-45) comprising:

whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "first criterion." By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "first determination means for determining based on a first criterion if said mobile phone is located outside a service range of a preferred communication system while connecting to said preferred communication system," (col. 6 lines 4-16);

determining if a scan time has expired while the mobile station is roaming, reading on the claimed "second determination means for determining if a predetermined time period passes," (col. 6 lines 60-61);

determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined

value or level; if so the control system sets a home band scan flag (F-HBS), reading on the claimed "fourth determination means for determining if said mobile phone is located within a service range of said preferred communication system while connecting to said non-preferred communication system," (col. 6 lines 23-34); and

carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a predetermined value, it will stop roaming, reading on the claimed "second connection means for connecting to said preferred communication system based on the determination of said fourth determination means," (col. 6 lines 35-40).

However, Aoki does not specifically disclose that mobile station is roaming for a predetermined time.

In the same field of endeavor, Cuffaro et al. clearly show and disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for a predetermined period of time, for example, one minute, reading on the claimed "third determination means for determining based on a second criterion that is different from said first criterion if said mobile phone is located outside a service range of a preferred communication system within said predetermined time period." When the time period expires handoffs are once again allowed, reading on the claimed "first connection means for connecting to a non-preferred communication system when said mobile phone is located outside a service

range of said preferred communication system continuously for a predetermined time period," (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

Consider **claim 32**, and **as applied to claim 31 above**, Aoki clearly shows and discloses the claimed invention except that the predetermined values are set so that roaming outside of a home system occurs less frequently than returning from the visited network.

In the same field of endeavor, Cuffaro et al. clearly show and disclose a method for handling oscillating mobile station handoffs between cells in a cellular communications network. A mobile switching center (MSC) in the network maintains a queue that stores the number of cells the mobile station has been. It considers the handoff sequence contiguous if the time period between successive handoffs is less than Threshold 1 (15 seconds). A contiguous sequence is considered oscillating if the time between the current handoff and the oldest handoff on the contiguous sequence is less than Threshold 2 (45 seconds), reading on the claimed "different criteria are set so that said connection relating to said second switch does not frequently occur as compared with said connection relating to said first switch," (abstract, col. 4 lines 3-13).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set the threshold values such that connections or roaming is inhibited when necessary as taught by Cuffaro et al. in the mobile station of Aoki, in order to return to the home system quickly.

Consider **claim 35**, and **as applied to claim 31 above**, Aoki clearly shows and discloses the claimed invention except that the mobile station is roaming for a predetermined time.

In the same field of endeavor, Cuffaro et al. clearly show and disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for a predetermined period of time, for example, one minute. When the time period expires handoffs are once again allowed, reading on the claimed "first switch connects to said non-preferred communication system if said mobile phone is located outside a service range of said preferred communication system continuously for a predetermined time period," (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

Consider **claim 38**, and **as applied to claim 37 above**, Aoki clearly shows and discloses the claimed invention except that the predetermined values

are set so that roaming outside of a home system occurs less frequently than returning from the visited network.

In the same field of endeavor, Cuffaro et al. clearly show and disclose a method for handling oscillating mobile station handoffs between cells in a cellular communications network. A mobile switching center (MSC) in the network maintains a queue that stores the number of cells the mobile station has been. It considers the handoff sequence contiguous if the time period between successive handoffs is less than Threshold 1 (15 seconds). A contiguous sequence is considered oscillating if the time between the current handoff and the oldest handoff on the contiguous sequence is less than Threshold 2 (45 seconds), reading on the claimed "first and second criteria are set so that said connection relating to said second connection means does not frequently occur as compared with said connection relating to said third connection circuits," (abstract, col. 4 lines 3-13).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set the threshold values such that connections or roaming is inhibited when necessary as taught by Cuffaro et al. in the mobile station of Aoki, in order to return to the home system quickly.

Consider **claim 41**, and **as applied to claim 37 above**, Aoki clearly shows and discloses the claimed invention except that the mobile station is roaming for a predetermined time.

In the same field of endeavor, Cuffaro et al. clearly show and disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for a predetermined period of time, for example, one minute. When the time period expires handoffs are once again allowed, reading on the claimed "first switch connects to a non-preferred communication system if said mobile phone is located outside a service range of a preferred communication system continuously for a predetermined time period," (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

Consider **claim 43**, Aoki clearly shows and discloses a mobile station comprising an antenna connected to a transceiver connected to a control system, a received signal-level detector included in the receiver portion of the transceiver, and a timer included in the control system, capable of quickly returning to its home system when roaming, reading on the claimed "mobile phone," (abstract, col. 5 lines 33-45) comprising:

whenever a mobile station is not engaged in a call, it will periodically check a control channel (CCH) from a cell site it obtains service from. Whether or not the mobile station is located in its home system may be determined by analyzing the system identification code (SID) or equivalent system identification

number of its cellular service provider for the area in which the mobile station is located, reading on the claimed "first criterion." By comparing the SID received on the CCh with the home SID, the mobile station may determine whether it is located in its home system, reading on the claimed "a first determination circuit for determining based on a first criterion if said mobile phone is located outside a service range of a preferred communication system while connecting to said preferred communication system," (col. 6 lines 4-16);

determining if a scan time has expired while the mobile station is roaming, reading on the claimed "a second determination circuit for determining if a predetermined time period passes," (col. 6 lines 60-61);

determining a change or difference between the present signal-level and last signal-level and whether or not the change is greater than a predetermined value or level; if so the control system sets a home band scan flag (F-HBS), reading on the claimed "a fourth determination circuit for determining if said mobile phone is located within a service range of said preferred communication system while connecting to said non-preferred communication system," (col. 6 lines 23-34); and

carrying out the home band scan for a preferred CCH, and if the mobile station determines that the signal-level of the received CCH is greater than a predetermined value, it will stop roaming, reading on the claimed "second switch for connecting to said preferred communication system based on the determination of said fourth determination means," (col. 6 lines 35-40).

However, Aoki does not specifically disclose that mobile station is roaming for a predetermined time.

In the same field of endeavor, Cuffaro et al. clearly show and disclose an oscillation detection process that detects a mobile station with an oscillating handoff pattern. Further handoffs of the oscillating mobile station are inhibited for a predetermined period of time, for example, one minute, reading on the claimed "third determination circuit for determining based on a second criterion that is different from said first criterion if said mobile phone is located outside a service range of a preferred communication system within said predetermined time period." When the time period expires handoffs are once again allowed, reading on the claimed "first switch for connecting to a non-preferred communication system when said mobile phone is located outside a service range of said preferred communication system continuously for a predetermined time period," (col. 3 lines 49-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a period of time as taught by Cuffaro et al. in the mobile station of Aoki, so that a mobile station will roam only when necessary.

9. **Claims 3-4, 9-10, 14-15, 18-19, 24-25, 29-30, 33-34, 39-40 and 44-45** are rejected under 35 U.S.C. 103(a) as being obvious over **Aoki (U.S. Patent # 6,600,922 B1)** in view of **Choi (Pub # U.S. 2003/0040311 A1)**.

Consider **claim 3**, and **as applied to claim 1 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public land mobile network) that provides a mobile terminal with service and PLMN that can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2 is a standard for determining whether a cell transmits at a useful signal strength or at a non-useful signal strength, reading on the claimed "first and second criteria are threshold of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 4**, Akoi, as modified by Choi, disclose the claimed invention **as applied to claim 1 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that the threshold

relating to said determination in (3) is higher than the threshold relating to said determination in (1)," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 9**, and **as applied to claim 7 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public land mobile network) that provides a mobile terminal with service and PLMN that can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2 is a standard for determining whether a cell transmits at a useful signal strength or at a non-useful signal strength, reading on the claimed "first and second criteria are thresholds of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength

as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 10**, Aoki, as modified by Choi, disclose the claimed invention **as applied to claim 9 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that said first criterion is higher than the second criterion," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 14**, and **as applied to claim 13 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public land mobile network) that provides a mobile terminal with service and PLMN that can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2 is a standard for determining whether a cell transmits at a useful signal strength

or at a non-useful signal strength, reading on the claimed "first and second criteria are threshold of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 15**, Aoki, as modified by Choi, disclose the claimed invention **as applied to claim 14 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that the threshold relating to said determination in (3) is higher than the threshold relating to said determination in (1)," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 18**, and **as applied to claim 16 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public land mobile network) that provides a mobile terminal with service and PLMN that

can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2 is a standard for determining whether a cell transmits at a useful signal strength or at a non-useful signal strength, reading on the claimed "criteria is a threshold of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 19**, Akoi, as modified by Choi, disclose the claimed invention **as applied to claim 18 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that the threshold relating to said second determination means is higher than the threshold relating to said first determination means," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 24**, and **as applied to claim 22 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public land mobile network) that provides a mobile terminal with service and PLMN that can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2 is a standard for determining whether a cell transmits at a useful signal strength or at a non-useful signal strength, reading on the claimed "criteria is a threshold of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 25**, Akoi, as modified by Choi, disclose the claimed invention **as applied to claim 24 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that the threshold

relating to said third determination means is higher than the threshold relating to said fourth determination means," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 29**, and **as applied to claim 28 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public land mobile network) that provides a mobile terminal with service and PLMN that can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2 is a standard for determining whether a cell transmits at a useful signal strength or at a non-useful signal strength, reading on the claimed "first and second criteria are threshold of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength

as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 30**, Akoi, as modified by Choi, disclose the claimed invention **as applied to claim 29 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that the threshold relating to said third determination means is higher than the threshold relating to said first determination means," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 33**, and **as applied to claim 31 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public land mobile network) that provides a mobile terminal with service and PLMN that can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2

is a standard for determining whether a cell transmits at a useful signal strength or at a non-useful signal strength, reading on the claimed "criteria is a threshold of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 34**, Akoi, as modified by Choi, disclose the claimed invention **as applied to claim 33 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that the threshold relating to said second determination circuit is higher than the threshold relating to said first determination circuit," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 39**, and **as applied to claim 37 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public

land mobile network) that provides a mobile terminal with service and PLMN that can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2 is a standard for determining whether a cell transmits at a useful signal strength or at a non-useful signal strength, reading on the claimed "criteria is a threshold of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 40**, Aoki, as modified by Choi, disclose the claimed invention **as applied to claim 39 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that the threshold relating to said third determination circuit is higher than the threshold relating to said fourth determination circuit," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 44**, and **as applied to claim 43 above**, Aoki clearly discloses the claimed invention except that the predetermined values are received electric field intensity.

In the same field of endeavor, Choi clearly shows and discloses a method for cell selection of a mobile terminal in which there is a "home" PLMN (public land mobile network) that provides a mobile terminal with service and PLMN that can permit the roaming of the mobile terminal is referred to as "available PLMN," (paragraphs 20 and 36). A measured signal quality is compared with a prescribed threshold to determine an available condition. Threshold-1 is a standard for determining an available cell and non-available cell, and threshold-2 is a standard for determining whether a cell transmits at a useful signal strength or at a non-useful signal strength, reading on the claimed "first and second criteria are threshold of received electric field intensity," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Consider **claim 45**, Akoi, as modified by Choi, disclose the claimed invention **as applied to claim 44 above**, and in addition, Choi further discloses threshold-1 has a value larger than threshold-2, reading on the claimed "threshold of received electric field intensity is determined so that the threshold

relating to said third determination circuit is higher than the threshold relating to said first determination circuit," (paragraph 37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to set a threshold value as signal strength as taught by Choi in the mobile station of Aoki, so that a mobile station will roam effectively.

Conclusion

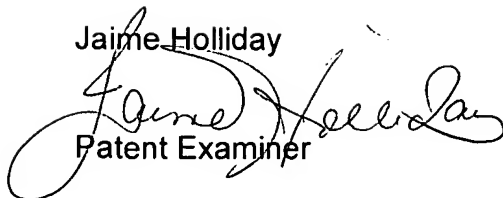
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaime M. Holliday whose telephone number is (571) 272-8618. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


NICK CORSARO
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